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NOTICE OF ALLOWANCE AND FEE(S) DUE

20280 7590 11/12/2009

MOTOROLA INC
600 NORTH US HIGHWAY 45
W4 - 39Q
LIBERTYVILLE, IL 60048-5343

EXAMINER

RAMPURIA, SHARAD K

ART UNIT

PAPER NUMBER

2617

DATE MAILED: 11/12/2009

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/696,042

10/29/2003

Maya Benson

CE00532UM

6040

TITLE OF INVENTION: METHOD AND APPARATUS FOR ESTABLISHING DIRECT COMMUNICATION FOR MOBILES IN A RADIO COMMUNICATION SYSTEM

| APPLN. TYPE | SMALL ENTITY | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE |
|----------------|--------------|---------------|---------------------|----------------------|------------------|------------|
| nonprovisional | NO | \$1510 | \$300 | \$0 | \$1810 | 02/12/2010 |

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

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**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

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20280 7590 11/12/2009

MOTOROLA INC
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I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

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| (Depositor's name) |
| (Signature) |
| (Date) |

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/696,042 10/29/2003 Maya Benson CE00532UM 6040

TITLE OF INVENTION: METHOD AND APPARATUS FOR ESTABLISHING DIRECT COMMUNICATION FOR MOBILES IN A RADIO COMMUNICATION SYSTEM

| APPLN. TYPE | SMALL ENTITY | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE |
|----------------|--------------|---------------|---------------------|----------------------|------------------|------------|
| nonprovisional | NO | \$1510 | \$300 | \$0 | \$1810 | 02/12/2010 |

| EXAMINER | ART UNIT | CLASS-SUBCLASS |
|--------------------|----------|----------------|
| RAMPURIA, SHARAD K | 2617 | 455-425000 |

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
- 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s); (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

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This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
| 10/696,042 | 10/29/2003 | Maya Benson | CE00532UM | 6040 |
| 20280 | 7590 | 11/12/2009 | EXAMINER | |
| MOTOROLA INC 600 NORTH US HIGHWAY 45 W4 - 39Q LIBERTYVILLE, IL 60048-5343 | | | RAMPURIA, SHARAD K | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2617 | |
| DATE MAILED: 11/12/2009 | | | | |

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 0 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 0 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

| | | | |
|-------------------------------|------------------------|---------------------|--|
| Notice of Allowability | Application No. | Applicant(s) | |
| | 10/696,042 | BENSON ET AL. | |
| | Examiner | Art Unit | |
| | SHARAD RAMPURIA | 2617 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 07/29/09.
2. ☒ The allowed claim(s) is/are 5-8, 10-11, 14-17, 19 (renumbered as 1-11 respectively).
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| <ol style="list-style-type: none"> 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____ 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | <ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application 6. <input type="checkbox"/> Interview Summary (PTO-413), Paper No./Mail Date _____. 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other _____. |
|--|---|

/Sharad Rampuria/
Primary Examiner, Art Unit 2617

DETAILED ACTION

Examiner's Amendment

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Gary J. Cunningham (Reg. No. 33,488) on 11/03/09.

The claims have been amended as follows:

Claims 9, 12 and 13 are cancelled.

1-4. (Canceled)

5. (Currently Amended) A method for operating a radiotelephone system, the method comprising:

at one or more mobile stations of the radiotelephone system, detecting other mobile stations to which radio propagation conditions are sufficiently good;

at the one or more mobile stations, communicating information about the detected mobile stations to a base station of the radiotelephone system;

at a first mobile station, after the detecting the other mobile stations to which the radio propagation conditions are sufficiently good and after the communicating the information about the detected mobile stations, requesting communication with a second mobile station; ~~and~~

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at the base station, if the radio propagation conditions between the first mobile station and the second mobile station are sufficiently good, instructing the first mobile station and the second mobile station to establish direct communication; and

at the first mobile station, in response to the instruction to establish direct communication, entering a packet-based connectionless communication mode with the second mobile station, wherein the packet-based connectionless communication mode comprising entering an Opportunity Driven Multiple Access relay mode,

wherein the instruction step includes:

initiating a first communication link between the base station and the first mobile station;

communicating a direct communication instruction to the first mobile station;

initiating a second communication link between the base station and the second mobile station;

communicating a direct communication instruction to the second mobile station;

and

terminating the first communication link and the second communication link.

6. (Previously Presented) The method of claim 5 further comprising:

at the base station, receiving the communication request from the first mobile station; and

from the information about the detected mobile stations from the first mobile station and the second mobile station, determining if the first mobile station and the second mobile station may initiate direct communication.

7. (Previously Presented) The method of claim 5 further comprising:
determining if each of the first mobile station and the second mobile station is a detected mobile of the other mobile station.
8. (Original) The method of claim 6 further comprising:
at the base station, determining a location of the first mobile station;
determining a location of the second mobile station; and
determining information about relative proximity of the first mobile station and the second mobile station based on the location of the first mobile station and the location of the second mobile station.
10. (Original) The method of claim 5 wherein detecting other mobile stations comprises:
detecting respective uplink transmissions from respective mobile stations to base stations of the radiotelephone system.
11. (Previously Presented) The method of claim 10 wherein detecting other mobile stations further comprises:

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determining a received signal strength for a detected uplink transmission from a mobile station;

if the received signal strength exceeds a threshold, identifying the mobile station as a detected mobile station.

14. (Currently Amended) A method for operating a base station in a radiotelephone system, the method comprising:

receiving, from respective mobile stations of the radiotelephone system, information about relay candidates of the respective mobile stations;

storing the information in respective relay candidate lists;

after the receiving the information about the relay candidates and after the storing the information in the respective relay candidate lists, receiving a request from a first mobile station to initiate a call with a second mobile station in the radiotelephone system;

based at least in part on a relay candidate list associated with the first mobile station, determining if the second mobile station is physically close to the first mobile station; and

if so, instructing the first mobile station and the second mobile station to enter a relay mode for direct link communication; and

at the first mobile station, in response to the instruction to enter the relay mode for direct link communication, entering a packet-based connectionless communication mode with

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the second mobile station, wherein the packet-based connectionless communication mode comprising entering an Opportunity Driven Multiple Access relay mode,

wherein the instruction step includes: initiating a first communication link between the base station and the first mobile station; communicating a direct communication instruction to the first mobile station; initiating a second communication link between the base station and the second mobile station; communicating a direct communication instruction to the second mobile station; and terminating the first communication link and the second communication link.

15. (Original) The method of claim 14 wherein instructing the first mobile station and the second mobile station to enter a relay mode comprises:

communicating information about the relay mode over a first link with the first mobile station;

communicating information about the relay mode over a second link with the second mobile station; and

terminating both the first link and the second link.

16. (Original) The method of claim 14 further comprising:

receiving from respective mobile stations of the radiotelephone system information about relay candidates of the respective mobile stations;

storing the information in respective relay candidate lists; and

receiving updates from the respective mobile stations for updating the respective relay candidate lists.

17. (Currently Amended) A radiotelephone comprising:

- a radio communication circuit configured for two-way radio communication with remote radio devices;
- a controller configured to control the radio communication circuit;
- means for detecting other radiotelephones to which radio propagation conditions are sufficiently good; and
- a memory configured to store information about the detected radiotelephones in the relay candidate list,

wherein the controller is configured to control the radio communication circuit to establish a radio link to a remote base station ~~to establish a radio link to the remote base station~~ to transmit the relay candidate list to the remote base station, and ~~to establish a radio link with a remote base station~~ to transmit a request for communication with another radiotelephone and to receive over the radio link a direct communication instruction generated by the remote base station in dependence on the relay candidate list, and further configured to control the radio communication circuit to interrupt the radio link and establish a relay radio link with the another ~~other~~ radiotelephone in response to the direct communication instruction; and further configured to, in response to the direct communication instruction, enter a packet-based connectionless communication mode with the another radiotelephone, wherein the packet-based

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connectionless communication mode comprises an Opportunity Driven Multiple Access relay mode;

wherein the base station instructs direct communication by:

initiating a first communication link between the remote base station and the radio

communication circuit;

communicating a direct communication instruction to the radio communication circuit;

initiating a second communication link between the base station and the another radiotelephone;

communicating a direct communication instruction to the another radiotelephone; and

terminating the first communication link and the second communication link.

18. (cancelled)

19. (Previously Presented) The radiotelephone of claim 17 wherein the controller is further configured to control the radio communication circuit to detect uplink radio transmissions from other radiotelephones and, in response to the detected uplink transmissions, to populate the relay candidate list.

Allowable Subject Matter

The following is an examiner's statement of reasons for allowance:

Claims 1-4, 9, 12-13, 18 are cancelled.

Claims 5-8, 10-11, 14-17, 19 (renumbered as 1-11 respectively) are patentable.

The entire prior-art combination **disclosed** (in the office-actions of this case) fails to anticipate or render the claimed limitations in combination with all the recited limitations of the disclosed independent claims obvious (**viewed the entire claim as a whole**), over any of the prior art of record, alone or in combination.

Consequently, the disclosed independent claims are allowed on behalf of above-discussed reasons, and also preserved via Applicants arguments and remarks filed on 07/29/2009 as well. Since the disclosed dependent claims are dependant on one of the above independent claims, therefore they are also patentable.

Conclusion

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sharad Rampuria whose telephone number is (571) 272-7870. The examiner can normally be reached on M-F. (8:30-5 EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dwayne Bost can be reached on (571) 272-7023. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sharad Rampuria/
Primary Examiner
Art Unit 2617